- Draft -

ENVIRONMENTAL ASSESSMENT FOR MINUTEMAN III MODIFICATION

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DRAFT

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

ENVIRONMENTAL ASSESSMENT FOR MINUTEMAN III MODIFICATION

Agency: United States Air Force (USAF)

Background: Pursuant to the provisions of the National Environmental Policy Act (NEPA) of 1969, Executive Order 12114, Council on Environmental Quality (CEQ) Regulations [40 Code of Federal Regulations (CFR) Parts 1500-1508], 32 CFR Part 989, and the US Army Kwajalein Atoll Environmental Standards (UES), the USAF has conducted an assessment of the potential environmental consequences of the testing and deployment activities associated with proposed modifications to the Minuteman (MM) III Intercontinental Ballistic Missile (ICBM) system. The assessment focused on those activities that have the potential to change the human and natural environments.

The United States has historically relied on the concept of deterrence to maintain peace. Because the MM III will become the only land-based ICBM system in America's nuclear arsenal, the Department of Defense (DOD) is extending the life of the existing force of MM III ICBMs through the year 2020. As a life-extension action, the proposed modifications involve reconfiguration of the MM III missile Reentry System (RS) to be capable of carrying the Mark 21 reentry vehicle (RV) and warhead—currently deployed on Peacekeeper ICBM missiles undergoing deactivation—as well as the existing Mark 12A RV. The newer and more capable Mark 21 RVs will replace the older Mark 12 RVs now deployed on MM IIIs, thus enhancing nuclear safety and improving the future reliability of the weapon system. The proposed modifications will require testing and deployment of system hardware/software, equipment, and trainers needed to incorporate Mark 21 RVs onto missiles at any of the MM Launch Facilities (LFs) located within the three MM Wings (FE Warren AFB, Wyoming; Malmstrom AFB, Montana; and Minot AFB, North Dakota).

In conjunction with the RS modification and deployment of Mark 21 RVs, upgrade and replacement of electronic command and control console equipment, and software, is also needed at all Launch Control Centers (LCCs) located within the three MM Wings, and at other USAF and contractor trainer/test facilities supporting MM III ICBM operations. The planned console equipment upgrades are needed to resolve a variety of software deficiencies and aging hardware failures. The upgrades will also implement changes to the console operations software required for deployment of the Mark 21 RVs. All of the proposed MM III modifications are needed for continued nuclear deterrence and improved safety and reliability of the weapon system, and to compensate for the deactivation of Peacekeeper missiles.

The attached Environmental Assessment (EA) considers all potential impacts of the Proposed Action and the No Action Alternative. This Finding of No Significant Impact (FONSI) summarizes the results of the evaluations of the proposed activities associated with the proposed MM III modification.

Proposed Action and No Action Alternative: The attached EA, which is hereby incorporated by reference, assesses the environmental impacts of the proposed testing and deployment activities associated with the proposed MM III modification. During the test and evaluation phase, MM III missile flight tests, utilizing the modified RS, will be conducted at Vandenberg AFB, California. The MM boosters used in the flight tests will be pulled from operational LFs randomly selected at the Wings. The LFs will then receive replacement boosters provided by the rocket motor depot maintenance facility at Hill AFB, Utah.

At Vandenberg AFB, the missile launches will occur from existing silos that are regularly used for these types of tests. On each test missile, the operational RVs are replaced with one to three RV simulators. At the terminal end of each missile flight, the test RVs will impact near the US Army Kwajalein Atoll (USAKA) in the Republic of the Marshall Islands (RMI). In addition to the ongoing three to four MM III Force Development Evaluation flight tests conducted every year, two additional flight tests per year will occur in Fiscal Years 2005 and 2006.

During the deployment phase for RS modifications at the Wings, efforts will include the distribution of new and modified hardware for mounting the Mark 21 RVs onto MM IIIs, new electronic flight equipment, changes to command and launch equipment, new support equipment, new and modified software, and modifications to personnel training hardware. RS-related test and support equipment at both Hill and Vandenberg AFBs will also be modified accordingly. Deployment of the RS modification kits and Mark 21 RVs at the three MM Wings will begin in 2006 and continue through 2011.

For the new command and control console equipment, deployment activities will involve the replacement of older console equipment (including Visual Display Units and computer Head Disk Assemblies), and related software upgrades, at all operational LCCs located within the three MM Wings, and at various trainer and support facilities located at each Wing support base, Hill AFB, Vandenberg AFB, and at other USAF/contractor support locations. Deployment at all trainer units will be completed prior to fielded deployment in 2006. Deployment of the remaining equipment at operational facilities will occur as part of routine maintenance, or by force deployment over a 3-year period beginning at the end of 2005 or 2006. In most cases, the old console equipment will be declassified and turned over to the local or regional Defense Reutilization and Marketing Office for resale, material recycling, and/or disposal as solid or hazardous waste.

Under the No Action Alternative, the USAF would not proceed with the proposed MM III modification. However, ongoing system monitoring and testing of MM III components and subsystems (including annual missile flight tests) would continue at all locations where such operations are currently conducted. By not implementing the proposed modifications, the nuclear safety and future reliability of the MM III weapon system would not be enhanced. Eventually, the No Action Alternative would require some missiles to be removed from the operational force, thus reducing the overall mission readiness of the MM III ICBM system and jeopardizing national security.

Though other possible alternatives to the Proposed Action were considered—including computer simulations and alternative test locations—all were deemed unreasonable and eliminated from further analysis.

Environmental Effects: Potential environmental effects associated with the Proposed Action and No Action Alternatives were assessed for the following environmental resources: air quality, noise, biological resources, cultural resources, health and safety, and hazardous materials and waste management. Other resource areas—including hydrology and groundwater, utilities, solid waste management, land use, socioeconomics, environmental justice, soil resources, and visual and aesthetic resources—were not analyzed further because no impacts to these resources are anticipated as a result of implementing the Proposed Action. Potential effects on the environment from implementation of the Proposed Action are described in the following paragraphs:

- ***Air Quality.*** For missile flight tests at Vandenberg AFB, rocket motor exhaust emissions will be released into the lower atmosphere. Because the launches are infrequent, short-term events, emissions products will be rapidly diluted and dispersed by prevailing winds. No violation of air quality standards or health-based standards for non-criteria pollutants is anticipated. No changes to existing or new air emission permits are required. Also, a review of the General Conformity Rule

resulted in a finding of presumed conformity with the State Implementation Plan. From a global perspective, the exhaust emissions released from the MM III motors into the upper atmosphere will add to the overall global loading of chlorine and other gases that contribute to long-term ozone depletion. However, when compared to the amount of emissions released on a global basis, the flight tests will not be statistically significant in contributing to cumulative impacts on the stratospheric ozone layer. Overall, no significant impacts to air quality will occur.

- ***Noise.*** Each MM III flight test launch will generate noise levels ranging from 125 decibels (dB) (unweighted) in the immediate vicinity of the launch site at Vandenberg AFB, to around 105 dB (unweighted) or lower in some populated areas off base. While these noise exposure levels can be characterized as very loud, they will occur infrequently, are very short in duration (about 20 seconds per launch), and will have little effect on the Community Noise Equivalent Level off base. Sonic booms generated by the MM III missile will typically start reaching the surface some 25 nautical miles downrange of the launch site, and thus will not affect coastal land areas. Consequently, no significant impacts to the noise environment will occur.

- ***Biological Resources.*** For biological resources at Vandenberg AFB, some disturbance to marine mammals and migratory birds from missile launches and helicopter overflights is expected. However, a National Marine Fisheries Service (NMFS) incidental "take" permit is in place that authorizes incidental harassment of pinnipeds. Helicopter overflights are required to maintain minimal distances away from protected seal haul-outs/rookeries and bird roosting/nesting areas. On-base monitoring before and after launches has shown no long-term effects on seals, or seabirds and shorebirds. Other studies at the base have shown no concerns for long-term acidification of surface waters as a result of launch emissions. Some temporary distress to vegetation near launch sites can be expected. Though the probability for an aborted MM III launch to occur is extremely low, the dispersion of unburned propellant in such cases is not expected to cause concern for perchlorate build-up in local waters. Base actions would immediately be taken to remove unburned propellant and any other hazardous materials that had fallen on the beach or in shallow waters. Any propellants remaining in the off-shore waters would be subject to constant wave action and currents; thus, water circulation would help to prevent localized build-up of perchlorate concentrations, which has proven to be a slow process.

  For the over-ocean launch corridor, sonic boom overpressures from launch vehicles could be audible to protected marine species underwater. While 218 dB (referenced to 1 micropascal) is considered the lower limit for inducing temporary threshold shift (TTS) in marine mammals and sea turtles, the resulting underwater pressures generated by MM III sonic booms are expected to be less than 140 dB (referenced to 1 micropascal). Because the resulting pressures will be relatively low, and very short in duration, no long-term adverse effects are anticipated. For marine animals, the potential also exists for direct contact or exposure to underwater shock/sound waves from the splashdown of spent rocket motors. However, the likelihood for a protected marine mammal or sea turtle to be located within several meters (m) of the impact point is extremely low. The MM III flight tests will occur only a few times per year, and motor impacts from each flight will likely not occur at the exact same locations. Though residual amounts of battery electrolytes, hydraulic fluid, propellant, and other materials in the spent rocket motors could lead to the contamination of seawater, the risk of marine life coming in contact with, or ingesting, toxic levels of solutions is unlikely, considering the rapid dilution of any contaminants and the rapid sinking of any contaminated components to the ocean floor.

  At USAKA, target sites for test RVs are located in the deep ocean area east of the Kwajalein reef or in the vicinity of Illeginni Island. Though migratory seabirds and shorebirds near RV impact areas

can be expected to exhibit brief flight responses to sonic boom overpressures, local populations do not appear to have been adversely affected by years of testing. The sonic booms could also affect hearing in marine mammals and sea turtles underwater. However, at 117 to 176 dB (referenced to 1 micropascal), the resulting underwater pressures will be well below the lower limit of 218 dB (referenced to 1 micropascal) for inducing TTS in such animals. Because the resulting pressures will be relatively low, and very short in duration, no long-term adverse effects are anticipated. Like the spent MM III rocket motors, an RV impacting in the ocean or Kwajalein Atoll lagoon will result in underwater shock/sound waves, but with much higher pressure-levels being generated. The pressure levels could prove fatal to protected marine mammals and sea turtles within several feet (ft) of the impact point, and induce TTS in animals within 128 ft (39 m) from the splashdown site. However, the number of groups (small pods or schools) of these animals to be struck or exposed to harmful underwater shock/sound waves is estimated to be no higher than 0.000003 to 0.000009 per RV test event, depending on the number of RV simulators carried on the launch vehicle. When considering that only a few MM III launches are conducted every year, that RV target locations are not always the same, and the extremely low probability for marine mammals and sea turtles to be impacted by underwater shock/sound waves, the risk of animals being injured or killed is minimal.

In the event that an RV impacts directly on Illeginni Island or in the shallow coral reefs of Kwajalein Atoll, a crater will form. Post-test debris recovery and cleanup operations on Illeginni Island will also cause some short-term disturbance. Such impacts could potentially result in the loss of some protected migratory birds, mollusks, sponges, corals, and other marine life; and damage small areas of migratory bird habitat, sea turtle nesting sites, and coral reef habitat. However, the frequency of such occurrences is very low (estimated to be four to five instances over a 20-year period), and the overall effects are considered to be minimal. Targeted areas for RVs will be selected to minimize impacts to protected reefs and identified wildlife habitats.

Following an aerial detonation or impact of an RV in the ocean, the Kwajalein Atoll lagoon, and/or on Illeginni Island, the resulting debris would disseminate any on-board hazardous materials around the impact point and some distance downwind. However, the contaminants released by some RVs are extremely insoluble, and the dilution and mixing of the ocean and lagoon are so great that the concentration in water would be no different than natural background levels. Short-term exposures to birds or other wildlife is unlikely to result in significant accumulations, particularly when considering the small amount of unrecovered material that may persist in the environment. Thus, RV contaminants do not present a major hazard to terrestrial and marine life.

Overall, no significant impacts to biological resources will occur at any of the locations affected. The implementation of mitigation measures identified in the attached EA will help minimize or eliminate potentially adverse impacts that might occur.

Because of the potential for adverse impacts on biological resources at USAKA, the proposed RV flight test activities will also require a Document of Environmental Protection (DEP) in accordance with the UES. Separate from the NEPA process under which the attached EA is being prepared, the DEP process serves to provide a structured forum for USAKA, US Government agencies, the RMI Environmental Protection Authority (RMIEPA), and the general public to review and comment on proposed US activities that have the potential to affect the USAKA environment.

- ***Cultural Resources.*** Given the extremely limited potential for any remaining traditional/ prehistoric remains on Illeginni Island, the likelihood of impacts to any resources must be considered either non-existent or extremely low. Though several buildings on the island are of the Cold War era, they currently do not meet RMI criteria for historic significance. Additionally, there is a low probability

for the buildings to be impacted by RV tests. As a result, little or no impacts to cultural resources are expected.

- ***Health and Safety.*** All program activities will be accomplished in accordance with applicable DOD, Federal, state, and foreign health and safety standards. Regarding rocket motor transportation over public roads, accident rates for ICBM-related operations have historically been very low. For flight tests from Vandenberg AFB, range safety officials will evacuate the launch hazard area and issue Notices to Airmen, as well as to Mariners, and the missile hazard zones will be determined clear of both aircraft and surface vessels before proceeding with any flight test. At USAKA, the RV flight tests will require that the Mid-Atoll Corridor Impact Area be cleared of aircraft and vessels in a similar manner. Non-essential personnel are evacuated from the RV impact area, while remaining personnel are placed in protective shelters.

  As previously mentioned, some RV tests at USAKA will release hazardous and toxic materials around the impact area. For a land impact on Illeginni Island, such debris will occur close to the point of impact, mostly within a 328-ft (100-m) radius. As a result, the major potential health concern of these tests is the subsequent effects on workers visiting the island, in support of long-term management and restoration of the island. However, modeling and post-test sampling results from prior RV flight tests have shown that air sampling levels for contaminants are far below Federal guidelines, and similar to pre-test background levels. Various post-test safety and health procedures already in place will be followed. These procedures include securing the impact area from inadvertent traffic, and the protection of on-site workers from respiratory exposure during post-test cleanup operations. These and other mitigation measures listed in Section 4.7 of the attached EA will be applied to all RV tests at USAKA.

  By adhering to established safety standards and procedures, the level of risk to military personnel, contractors, and the general public will be minimal at all of the locations affected. Thus, no significant impacts to either occupational or public health and safety are expected to occur.

- ***Hazardous Materials and Waste Management***. For hazardous materials and waste management, activities at each affected installation are governed by specific environmental regulations, and existing pollution prevention and facility response plans, that minimize any potential environmental consequences resulting from the use and handling of these materials. Each installation has a plan in place that provides guidelines and instructions to prevent and control accidental spills of hazardous materials, including a description of appropriate countermeasures to contain, clean up, and mitigate the effects of a spill or discharge. Appropriate permits are in place and workers are trained to follow procedures for the proper storage, transportation, and disposal of hazardous waste. Hazardous material and waste handling capacities will not be exceeded, and management programs will not have to change.

  In regards to the release of hazardous and toxic materials from RV tests at Illeginni Island, any residual fragments of RVs will be recovered from land or shallow water areas and properly disposed of in accordance with the UES and all applicable US regulations. As previous air and soil sampling results have shown, levels of contaminants at Illeginni Island continue to remain at or near background levels, even after years of RV testing.

  Consequently, no significant impacts from the management of hazardous materials and waste will occur at any of the sites affected.

Monitoring and Mitigation: Within the attached EA, various management controls and engineering systems for all locations affected are described. Required by Federal, state, DOD, and Service-specific

environmental and safety regulations, and international agreements, these measures are implemented through normal operating procedures.

In addition, to minimize the level of impacts that might occur at USAKA as a result of the RV flight tests, specific monitoring activities and mitigation measures have been identified for implementation as part of the proposed MM III Modification. They include specific recovery and cleanup procedures for the removal of RV debris, air and soil monitoring for potential contaminants, minimizing disturbance of forest vegetation, the preservation and protection of sea turtle nesting habitat, and biological tissue sampling. These and other mitigation measures to be implemented are summarized in Section 4.7 of the attached EA.

As part of the DEP process described earlier, the USAF will continue coordination and consultation with USAKA, the US Fish and Wildlife Service (USFWS) and NMFS Pacific Islands Regional Offices in Hawaii, and the RMIEPA, to clarify current mitigation measures and determine whether any additional mitigation measures are warranted. Biennial biological resource inventories at USAKA, which are conducted by USFWS and NMFS personnel, will also continue in accordance with the UES.

Conclusion: Based upon review of the facts and analyses contained in the attached EA, the USAF has concluded that implementation of the Proposed Action will not have a significant environmental impact, either by itself or cumulatively with other projects. Accordingly, the requirements of NEPA, the CEQ Regulations, 32 CFR Part 989, and UES are fulfilled and an Environmental Impact Statement is not required. An availability notice for public review was published in local newspapers for each program support location on or before September 2, 2004, initiating a 30-day review period that ends on October 1, 2004. Copies of the Draft EA and Draft FONSI were made available in local libraries or offices in California, Colorado, Montana, Nebraska, North Dakota, Utah, Wyoming, and in the RMI. The Draft EA and Draft FONSI also appeared on the Space and Missile Systems Center (SMC), Los Angeles AFB web site at http://ax.losangeles.af.mil/axf, listed under "announcements." The point of contact for questions, issues, and information relevant to the EA for MM III Modification is Dr. Ram Ramanujam, SERV Models and Environmental Engineer, ICBM System Program Office, Hill AFB, Utah. Dr. Ramanujam can be reached by calling (801) 777-2846, by facsimile at (801) 775-2587, or by e-mail at Ram.Ramanujam@hill.af.mil. The SMC point of contact for this EA is Mr. Thomas Huynh, SMC/AXFV, Los Angeles AFB, California. Mr. Huynh can be reached by calling (310) 363-1541, by facsimile at (310) 363-1503, or by e-mail at Thomas.Huynh@losangeles.af.mil.

The signing of this FONSI completes the USAF's environmental impact analysis process for the proposed modifications.

Approved:

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TERRY J. JAGGERS, SES Date
Associate Deputy Assistant Secretary
(Science, Technology and Engineering)

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AFPD	Air Force Policy Directive
AFSPC	Air Force Space Command
ALC	Air Logistics Center
Al_2O_3	Aluminum Oxide
AS&I	Assembly, Surveillance, and Inspection
AVE	Aerospace Vehicle Equipment
Be	Beryllium
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CH_6N_2	Monomethylhydrazine
cm	Centimeter
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO	Colorado
CO_2	Carbon Dioxide
COP	Console Operations Program
CRT	Cathode Ray Tube
CSF	Conforming Storage Facility
dB	Decibels
dBA	A-weighted Decibels
DEP	Document of Environmental Protection
DOD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
DRMS	Defense Reutilization and Marketing Service
DU	Depleted Uranium
EA	Environmental Assessment
ECSG	Electronic Command Signal Generator
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMAD	Embedded Memory Array Dynamic
ESQD	Explosive Safety Quantity Distance
ETR	Extended Test Range
EWR	Eastern and Western Range
FDE	Force Development Evaluation
ft	Feet
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
FR	Federal Register
FY	Fiscal Year
GBI	Ground-Based Interceptor
GMD	Ground-Based Midcourse Defense
HAFB	Hill Air Force Base
gal	Gallon
HCl	Hydrogen Chloride
HDA	Head Disk Assembly
HMMP	Hazardous Materials Management Plan
Hz	Hertz
ICBM	Intercontinental Ballistic Missile
IRP	Installation Restoration Program
JTA	Joint Test Assembly
KEEP	Kwajalein Environmental Emergency Plan
kg	Kilogram
km	Kilometer
L	Liter
lb	Pounds
LCC	Launch Control Center
LF	Launch Facility
LHA	Launch Hazard Area
LLNL	Lawrence Livermore National Laboratory
LOA	Letter of Authorization
m	Meter

MAF	Missile Alert Facility
MDA	Missile Defense Agency
mi	Mile
MM	Minuteman
MMPA	Marine Mammal Protection Act
MOD	Model
MPF	Missile Processing Facility
MSL	Mean Sea Level
MT	Missile Transporter
MT	Montana
NAAQS	National Ambient Air Quality Standards
ND	North Dakota
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
N_2O_4	Nitrogen Tetroxide
NOAA	National Oceanic and Atmospheric Administration
NOTAM	Notice to Airmen
NOTMAR	Notice to Mariners
NO_X	Nitrogen Oxides
NRHP	National Register of Historic Places
OO-ALC/SPO	Ogden Air Logistics Center ICBM System Program Office
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PL	Public Law
$PM_{2.5}$	Particulate Matter Less Than or Equal to 2.5 Micrometers
PM_{10}	Particulate Matter Less Than or Equal to 10 Micrometers
PMFC	Pacific Marine Fishery Council
PMRF	Pacific Missile Range Facility
ppm	Parts per Million
psf	Pounds per Square Foot
PSRE	Propulsion System Rocket Engine
PTS	Permanent Threshold Shift
RCRA	Resources Conservation and Recovery Act
REACT SLEP	Rapid Execution and Combat Targeting Service Life Extension Program
RMI	Republic of the Marshall Islands
RMIEPA	Republic of the Marshall Islands Environmental Protection Authority
ROI	Region of Influence
RS	Reentry System
RTS	Ronald Reagan Ballistic Missile Defense Test Site
RV	Reentry Vehicle
SBCAPCD	Santa Barbara County Air Pollution Control District
SERV	Safety Enhanced Reentry Vehicle
SHPO	State Historic Preservation Office
SMIC	Strategic Missile Integration Complex
SO_2	Sulfur Dioxide
SW	Space Wing
SWI	Space Wing Instruction
TE	Transporter Erector
TTS	Temporary Threshold Shift
TVC	Thrust Vector Control
U	Uranium
UES	USAKA Environmental Standards
US	United States
USAF	United States Air Force
USAKA	US Army Kwajalein Atoll
USASMDC	US Army Space and Missile Defense Command
USASSDC	US Army Space and Strategic Defense Command
USC	United States Code
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
UT	Utah
VAFB	Vandenberg Air Force Base
VOC	Volatile Organic Compound
VDU	Visual Display Unit
WMO	World Meteorological Organization
WPRFMC	Western Pacific Regional Fishery Management Council
WY	Wyoming
µg/g	Micrograms per Gram
$\mu g/m^3$	Micrograms per Cubic Meter

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

As a result of previous United States (US) initiatives to cancel development programs for new intercontinental ballistic missile (ICBM) weapon systems, and its ongoing action to retire the current Peacekeeper ICBM weapon system, the Minuteman (MM) III weapon system will become the only land-based ICBM in America's nuclear arsenal (HAFB, 2003). In the December 2001 Nuclear Posture Review Report submitted to Congress, the Secretary of Defense laid out the direction for American nuclear forces over the next 10 years (DOD, 2002). As specified in the Report, the newer Peacekeeper Mark 21 reentry vehicles (RVs) would be transferred onto the fielded MM III ICBMs to enhance the safety and maintain the reliability of the MM III weapon system.

In addition to the transfer of the Mark 21 RVs, the command and control system for fielded MM III ICBMs requires the upgrade and replacement of aging electronic assemblies located at existing MM III Launch Control Centers (LCCs). The planned upgrades would include software improvements and hardware changes necessary to correct system deficiencies.

As the proponent for the proposed MM III modification, the Ogden Air Logistics Center ICBM System Program Office (OO-ALC/SPO) at Hill AFB is responsible for providing technical and logistical support for ICBM follow-on test and evaluation requirements, and managing acquisition efforts associated with silo-based ICBM systems.

The Purpose of an Environmental Assessment

An Environmental Assessment (EA) is prepared by a Federal agency to determine if an action it is proposing would significantly affect any portion of the environment.

The intent of an EA is to provide project planners and Federal decision-makers with relevant information on the impacts that a proposed action might have on the human and natural environments.

If the study finds no significant impacts, then the agency can record the results of that study in an EA document, and publish a Finding of No Significant Impact (FONSI). The agency can then proceed with the action. However, if the results of the EA indicate that there would be potentially significant impacts associated with the action, then the agency must proceed with the following actions:

- The executing agency must prepare and implement a mitigation plan that reduces the action's environmental impact(s) to less-than-significant levels; or,
- If the action cannot be feasibly mitigated to a level of no significant impact, the executing agency must then prepare and publish a detailed Environmental Impact Statement (EIS) to analyze the impacts in greater depth for the decision-makers' consideration.

In support of the OO-ALC/SPO, the Space and Missile Systems Center, Environmental Management Branch of Acquisition Civil and Environmental Engineering, determined that an Environmental Assessment (EA) was required to assess the potential environmental impacts from the testing and deployment activities associated with the MM III modification. This EA was prepared in accordance with the following regulations, statutes, and standards:

- National Environmental Policy Act (NEPA, 1969)
- Executive Order 12114 (*Environmental Effects Abroad of Major Federal Actions*) (Office of the President, 1979)

- The President's Council on Environmental Quality (CEQ) Regulations for Implementing NEPA [40 Code of Federal Regulations (CFR) Parts 1500-1508] (CEQ, 2002)

- US Air Force (USAF) Regulations for Implementing NEPA (32 CFR Part 989, *Environmental Impact Analysis Process*) (USAF, 2001d)

- *Environmental Standards and Procedures for US Army Kwajalein Atoll (USAKA) Activities in the Republic of the Marshall Islands* (USASMDC, 2003a).

1.2 BACKGROUND

The USAF is currently in the process of deactivating from service all 50 Peacekeeper ICBMs currently deployed in underground silos near FE Warren Air Force Base (AFB), Wyoming. Previously analyzed in the *Final Environmental Impact Statement for Peacekeeper Missile System Deactivation and Dismantlement* (USAF, 2000b), the deactivation process should be completed in 2005.

To compensate for deactivation of the Peacekeeper missiles, and for the termination of earlier ICBM replacement programs, the Department of Defense (DOD) will extend the life of the MM III weapon system. The current MM force consists of 500 missiles located within the three MM Wings at FE Warren AFB; Malmstrom AFB, Montana; and Minot AFB, North Dakota. A comprehensive set of life-extension/sustainment programs is currently underway to keep the missiles safe, secure, and reliable through the year 2020. Representing additional MM III life-extension actions, the proposed modifications analyzed in this EA involve reconfiguring the MM III ICBM so that it is capable of carrying the Mark 21 RV, which is currently deployed on Peacekeeper missiles.

In conjunction with the modifications for Mark 21 RVs, upgrade of electronic command and control console equipment and software would be needed at all LCCs located within the three MM Wings, and at several other USAF and contractor trainer/test facilities supporting MM III ICBM operations. The upgrades are needed to resolve a variety of software deficiencies and aging hardware failures. Only with the planned console upgrades can the USAF ensure a reliable command and control for the MM III weapon system through the year 2020.

1.3 PURPOSE OF THE PROPOSED ACTION

The proposed MM III modification involves design, development, testing, and deployment of new hardware/software, equipment, data, and trainers needed to incorporate Mark 21 RVs onto the Reentry System (RS) of existing MM III missiles at all three MM Wings. While reducing the overall number of nuclear warheads deployed on MM III missiles, this action would enhance the nuclear safety and improve the future reliability of the weapon system.

In conjunction with the deployment of RS modification kits and Mark 21 RVs, electronic command and control console equipment would be deployed, and console operations software upgraded, at all existing MM III LCCs and at other support locations. In addition to enhancing the targeting flexibility of the Mark 21 RVs through software changes, implementation of the console upgrades would correct a multitude of software deficiencies that affect critical combat capabilities for the MM III weapon system. It would also upgrade and replace aging electronic hardware assemblies with newer and more reliable units having improved logistics supportability.

1.4 NEED FOR THE PROPOSED ACTION

Because of recent developments concerning long-term nuclear weapons safety and reliability, force structure changes driven by nuclear arms reductions, and the absence of a replacement system for the MM III ICBM, it is imperative that US forces be given the ability to: (1) transition the newer Mark 21 RV from the deactivated Peacekeeper weapon system to the existing MM III force; and (2) upgrade the existing command and control systems at MM III LCCs, and at other supporting locations. Without these improvements, the long-term safety and reliability of MM III missiles currently deployed with the older RVs could be degraded. Eventually, this would require those missiles to be removed from the operational force. In addition, the continued use of deficient command and control software, and aging console hardware, would ultimately degrade system reliability and availability of fielded MM IIIs at all three MM Wings. Not implementing these improvements would reduce the overall mission readiness of the MM III ICBM system and jeopardize national security.

1.5 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This EA documents the environmental analysis of: (1) MM III missile flight tests using modified RS hardware/software, in addition to the continuation of Force Development Evaluation (FDE) flight tests; (2) deployment of new and modified RS hardware/software; and (3) deployment activities for new command and control console equipment. The types of activities and locations involved with these actions are briefly described in the following paragraphs, and are shown in Figure 1-1.

- **Flight Test and Evaluation of the RS Modification.** Following the development and qualification of hardware/software modifications to the RS, MM III missile flight tests, utilizing the modified RS, would be conducted at Vandenberg AFB, California. The MM boosters used in the flight tests would be pulled from operational launch facilities (LFs) randomly selected at the Wings. The LFs would then receive replacement boosters provided by the rocket motor depot maintenance facility at Hill AFB, Utah.

  At Vandenberg AFB, the missile launches would occur from existing silos that are regularly used for these types of tests. On each test missile, the operational RVs are replaced with simulated RVs. At the terminal end of each missile flight test, the RVs would impact near USAKA in the Republic of the Marshall Islands (RMI). In addition to the ongoing three to four MM III FDE flight tests conducted every year, two additional flight tests per year would occur in Fiscal Years 2005 and 2006.

- **Deployment of RS Modification Kits and Mark 21 RVs.** Starting in 2004, RS modification kits and related support equipment would be shipped from existing contractor facilities to each of the Wings (FE Warren, Malmstrom, and Minot AFBs), and to other test and trainer facility locations. Then, beginning in 2006 and continuing through 2011, the kits would be deployed onto existing MM III missiles at all three Wings. During this process, Mark 21 RVs would also be deployed at select missile silos, in addition to removal of all the older Mark 12 RVs.

  The long-term storage and/or disposition requirements for the Mark 12 RVs are not part of the proposed MM III modification.

- **Deployment of New Console Equipment.** Deployment activities would involve the replacement of command and control console equipment, and related software upgrades, at all operational LCCs located within the three MM Wings; and at various trainer and support facilities at each Wing support base, Hill AFB, Vandenberg AFB, and at other USAF/contractor support locations. The deployment activities would consist of: (1) replacement of the computer Head Disk Assembly (HDA),

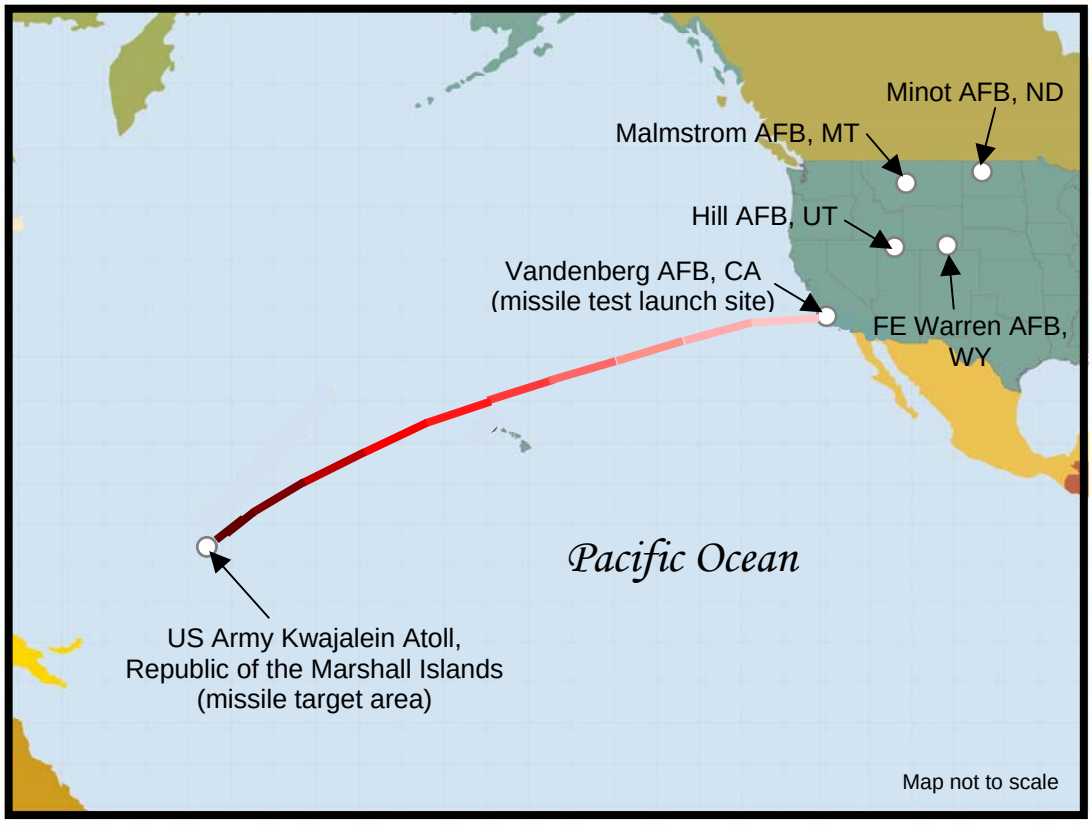

Figure 1-1. Locations for Proposed Minuteman III Modification

(2) replacement of the Visual Display Unit (VDU), and (3) upgrade of the Console Operations Program (COP) software and replacement of the Embedded Memory Array Dynamic (EMAD) module.

Deployment at all trainer units would be completed prior to fielded deployment in 2006. Operational facilities would likely receive the COP upgrade and replacement EMAD modules in 2006. Deployment of the remaining HDAs and VDUs would occur as part of routine maintenance, or by force deployment over a 3-year period beginning at the end of 2005 or 2006.

In accordance with CEQ and USAF regulations [40 CFR 1502.14(d) and 32 CFR 989.8(d), respectively], this EA also analyzes the No Action Alternative, which serves as the baseline from which to compare the Proposed Action. Under the No Action Alternative, none of the activities supporting the proposed MM III modification would occur. However, through ICBM follow-on test and evaluation programs, ongoing system monitoring, testing, and routine maintenance of MM III components (including annual missile flight tests at Vandenberg AFB) would continue to ensure weapon system safety, accuracy, and reliability for the remaining life of the MM III system.

1.6 DECISIONS TO BE MADE

Supported by the information and environmental impact analysis presented in this EA, the USAF will decide on whether to proceed in implementing the proposed MM III modification, or to select the No Action Alternative.

1.7 INTERAGENCY COORDINATION

Ongoing interagency coordination is integral to the preparation of this EA. The USAF has closely coordinated with both the Department of Energy (DOE) and the US Army Space and Missile Defense Command (USASMDC) as cooperating agencies during the analysis—the DOE for their involvement in supporting RV flight tests, and the USASMDC for the use of USAKA as a targeting area for test RVs.

Beginning in October 2003, the USAF initiated informal consultations with the Pacific Islands Regional Offices of the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), both located in Honolulu, Hawaii. Pursuant to the requirements of the *Environmental Standards and Procedures for US Army Kwajalein Atoll (USAKA) Activities in the Republic of the Marshall Islands* (USASMDC, 2003a), hereafter referred to as the USAKA Environmental Standards or UES, the USAF has held several consultation meetings and teleconferences with the agencies to discuss the potential for environmental impacts from the proposed RV flight test activities at USAKA, and to identify possible mitigation measures to minimize the level of impacts.

On January 29, 2004, the USAF also held a formal consultation meeting with the RMI Environmental Protection Authority (RMIEPA) and RMI Historic Preservation Office in Majuro, capital of the RMI Government, to review the proposed RV flight tests, and their potential for environmental and public health impacts at Kwajalein Atoll. Representatives from the USASMDC, USAKA, USFWS, NMFS, DOE, and US Environmental Protection Agency (USEPA) Region IX participated in this meeting. The USAF has solicited comments on the *Coordinating Draft Environmental Assessment for Minuteman III Modification* from the RMI Government and all of the participating agencies.

Through interagency coordination, it has been determined that the proposed RV flight test activities at USAKA will also require a Document of Environmental Protection (DEP) in accordance with the UES (USASMDC, 2003a) because of potential impacts on biological resources. Separate from the NEPA process under which this EA is being prepared, the DEP process serves to provide a structured forum for USAKA, US Government agencies, the RMIEPA, and the general public to review and comment on proposed US activities that have the potential to affect the USAKA environment. At the completion of the process, appropriate agencies sign the DEP to indicate agreement with the proposed activity, and associated mitigation and reporting measures. With the support of the USASMDC, the USAF expects to formally initiate the DEP process with release of a Notice of Proposed Activity at about the same time this Draft EA is released for public review.

1.8 PUBLIC NOTIFICATION AND REVIEW

In accordance with CEQ (2002) and USAF (2001d) regulations for implementing NEPA, the USAF is soliciting comments on this EA from interested and affected parties. A Notice of Availability for this Draft EA, and the enclosed Draft FONSI, has been published in local newspapers for each location involved. Copies of the Draft EA and Draft FONSI are being placed in local libraries or offices, in addition to being available over the Internet. This information is being provided in all regions affected, which include California, Colorado, Montana, Nebraska, North Dakota, Utah, Wyoming, and the RMI.

Following the 30-day public review period (as specified in the newspaper notices), the USAF will decide on whether to finalize the EA and sign the FONSI, which would allow the proposed MM III modification to proceed. If the decision is to finalize the document, the USAF will take into consideration those public and agency comments received, in developing the Final EA and FONSI. The Final EA will include those comments received and discuss how they were resolved. A copy of the Final EA and FONSI will be made available to those organizations and individuals who provided comments on the Draft EA/FONSI,

or who specifically requested a copy of the final document. The Final EA and FONSI will also be made available over the Internet at http://ax.losangeles.af.mil/axf.